

## SABIC Innovative Plastics Cycology® CX1440 PC+ABS (Asia Pacific)

Category : Polymer , Thermoplastic , ABS Polymer , Polycarbonate/ABS Alloy, Unreinforced , Polycarbonate (PC)

### Material Notes:

CYCOLOY CX1440 is a general purpose PC+ABS blend specially developed for thin wall applications requiring weld line strength and high flow with a good balance of properties

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Cycology-CX1440-PCABS-Asia-Pacific.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Cycology-CX1440-PCABS-Asia-Pacific.php)

| Physical Properties            | Metric                                              | English                                             | Comments                                |
|--------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------|
| Specific Gravity               | 1.15 g/cc                                           | 1.15 g/cc                                           | ASTM D792                               |
| Density                        | 1.15 g/cc                                           | 0.0415 lb/in <sup>3</sup>                           | ISO 1183                                |
| Moisture Absorption            | 0.160 %                                             | 0.160 %                                             | 23°C / 50% RH; ISO 62                   |
| Water Absorption at Saturation | 0.60 %                                              | 0.60 %                                              | ISO 62                                  |
| Linear Mold Shrinkage, Flow    | 0.0040 - 0.0060 cm/cm<br>@Thickness 3.20 mm         | 0.0040 - 0.0060 in/in<br>@Thickness 0.126 in        | SABIC Method                            |
| Melt Flow                      | 22 g/10 min<br>@Load 5.00 kg,<br>Temperature 260 °C | 22 g/10 min<br>@Load 11.0 lb,<br>Temperature 500 °F | ASTM D1238                              |
| Melt Index of Compound         | 20 g/10 min<br>@Load 5.00 kg,<br>Temperature 260 °C | 20 g/10 min<br>@Load 11.0 lb,<br>Temperature 500 °F | MVR [cm <sup>3</sup> /10 min]; ISO 1133 |

| Mechanical Properties     | Metric   | English  | Comments                     |
|---------------------------|----------|----------|------------------------------|
| Hardness, Rockwell L      | 90       | 90       | ISO 2039-2                   |
| Tensile Strength at Break | 45.0 MPa | 6530 psi | 50 mm/min; ISO 527           |
|                           | 45.0 MPa | 6530 psi | 5 mm/min; ISO 527            |
|                           | 45.0 MPa | 6530 psi | Type I, 50 mm/min; ASTM D638 |
| Tensile Strength, Yield   | 45.0 MPa | 6530 psi | 5 mm/min; ISO 527            |
|                           | 50.0 MPa | 7250 psi | Type I, 50 mm/min; ASTM D638 |
|                           | 50.0 MPa | 7250 psi | 50 mm/min; ISO 527           |
| Elongation at Break       | 45 %     | 45 %     | Type I, 50 mm/min; ASTM D638 |
|                           | 50 %     | 50 %     | 50 mm/min; ISO 527           |

| Mechanical Properties          | 60 %<br>Metric        | 60 %<br>English       | 5 mm/min* ISO 527<br>Comments                 |
|--------------------------------|-----------------------|-----------------------|-----------------------------------------------|
| Elongation at Yield            | 5.0 %                 | 5.0 %                 | 50 mm/min; ISO 527                            |
|                                | 5.0 %                 | 5.0 %                 | 5 mm/min; ISO 527                             |
|                                | 5.0 %                 | 5.0 %                 | Type I, 50 mm/min; ASTM D638                  |
| Tensile Modulus                | 2.40 GPa              | 348 ksi               | 1 mm/min; ISO 527                             |
|                                | 2.40 GPa              | 348 ksi               | 5 mm/min; ASTM D638                           |
| Flexural Yield Strength        | 80.0 MPa              | 11600 psi             | 2 mm/min; ISO 178                             |
|                                | 80.0 MPa              | 11600 psi             | 1.3 mm/min, 50 mm span; ASTM D790             |
| Flexural Modulus               | 2.30 GPa              | 334 ksi               | 2 mm/min; ISO 178                             |
|                                | 2.30 GPa              | 334 ksi               | 1.3 mm/min, 50 mm span; ASTM D790             |
| Izod Impact, Notched           | 1.00 J/cm             | 1.87 ft-lb/in         | Izod Impact, double-gated, 23°C; SABIC Method |
|                                | 4.50 J/cm             | 8.43 ft-lb/in         | ASTM D256                                     |
|                                | 2.50 J/cm             | 4.68 ft-lb/in         | ASTM D256                                     |
|                                | @Temperature -30.0 °C | @Temperature -22.0 °F |                                               |
| Izod Impact, Notched (ISO)     | 40.0 kJ/m²            | 19.0 ft-lb/in²        | 80*10*3; ISO 180/1A                           |
|                                | 20.0 kJ/m²            | 9.52 ft-lb/in²        | 80*10*3; ISO 180/1A                           |
|                                | @Temperature -30.0 °C | @Temperature -22.0 °F |                                               |
| Charpy Impact, Notched         | 4.00 J/cm²            | 19.0 ft-lb/in²        | Edgew 80*10*3 sp=62mm; ISO 179/1eA            |
|                                | 2.00 J/cm²            | 9.52 ft-lb/in²        | Edgew 80*10*3 sp=62mm; ISO 179/1eA            |
|                                | @Temperature -30.0 °C | @Temperature -22.0 °F |                                               |
| Dart Drop, Total Energy        | 25.0 J                | 18.4 ft-lb            | ASTM D3763                                    |
|                                | @Temperature -30.0 °C | @Temperature -22.0 °F |                                               |
|                                | 55.0 J                | 40.6 ft-lb            | ASTM D3763                                    |
|                                | @Temperature 23.0 °C  | @Temperature 73.4 °F  |                                               |
| Impact Test                    | 70.0 J                | 51.6 ft-lb            | Multiaxial Impact; ISO 6603                   |
| Taber Abrasion, mg/1000 Cycles | 70                    | 70                    | CS-17, 1 kg; SABIC Method                     |

| Thermal Properties | Metric | English | Comments |
|--------------------|--------|---------|----------|
|--------------------|--------|---------|----------|

| Thermal Properties<br>CTE, linear, Parallel to Flow | 71.0 µm/m-°C<br>Metric       | 39.4 µin/in-°F<br>English   | Comments<br>ISO 11359-2            |
|-----------------------------------------------------|------------------------------|-----------------------------|------------------------------------|
|                                                     | @Temperature -40.0 - 40.0 °C | @Temperature -40.0 - 104 °F |                                    |
|                                                     | 75.0 µm/m-°C                 | 41.7 µin/in-°F              | ASTM E 831                         |
|                                                     | @Temperature -40.0 - 40.0 °C | @Temperature -40.0 - 104 °F |                                    |
| CTE, linear, Transverse to Flow                     | 73.0 µm/m-°C                 | 40.6 µin/in-°F              | ISO 11359-2                        |
|                                                     | @Temperature -40.0 - 40.0 °C | @Temperature -40.0 - 104 °F |                                    |
|                                                     | 77.0 µm/m-°C                 | 42.8 µin/in-°F              | ASTM E 831                         |
|                                                     | @Temperature -40.0 - 40.0 °C | @Temperature -40.0 - 104 °F |                                    |
| Thermal Conductivity                                | 0.200 W/m-K                  | 1.39 BTU-in/hr-ft²-°F       | ASTM C177                          |
|                                                     | 0.200 W/m-K                  | 1.39 BTU-in/hr-ft²-°F       | ISO 8302                           |
| Hot Ball Pressure Test                              | <= 100 °C                    | <= 212 °F                   | IEC 60695-10-2                     |
| Deflection Temperature at 0.46 MPa (66 psi)         | 117 °C                       | 243 °F                      | Edgew 120*10*4 sp=100mm; ISO 75/Be |
|                                                     | 115 °C                       | 239 °F                      | unannealed; ASTM D648              |
|                                                     | @Thickness 3.20 mm           | @Thickness 0.126 in         |                                    |
| Deflection Temperature at 1.8 MPa (264 psi)         | 95.0 °C                      | 203 °F                      | Edgew 120*10*4 sp=100mm; ISO 75/Ae |
|                                                     | 95.0 °C                      | 203 °F                      | unannealed; ASTM D648              |
|                                                     | @Thickness 3.20 mm           | @Thickness 0.126 in         |                                    |
| Vicat Softening Point                               | 113 °C                       | 235 °F                      | Rate B/50; ASTM D1525              |
|                                                     | 114 °C                       | 237 °F                      | Rate B/50; ISO 306                 |
|                                                     | 116 °C                       | 241 °F                      | Rate B/120; ISO 306                |
| UL RTI, Electrical                                  | 60.0 °C                      | 140 °F                      | UL 746B                            |
| UL RTI, Mechanical with Impact                      | 60.0 °C                      | 140 °F                      | UL 746B                            |
| UL RTI, Mechanical without Impact                   | 60.0 °C                      | 140 °F                      | UL 746B                            |
| Flammability, UL94                                  | HB                           | HB                          | UL 94                              |
|                                                     | @Thickness 0.750 mm          | @Thickness 0.0295 in        |                                    |
|                                                     | HB                           | HB                          | UL 94                              |
|                                                     | @Thickness 3.00 mm           | @Thickness 0.118 in         |                                    |

| Thermal Properties | 650 °C<br>Metric   | 1200 °F<br>English  | Comments 2-12 |
|--------------------|--------------------|---------------------|---------------|
|                    | @Thickness 3.20 mm | @Thickness 0.126 in |               |

| Electrical Properties | Metric                    | English                   | Comments            |
|-----------------------|---------------------------|---------------------------|---------------------|
| Volume Resistivity    | >= 1.00e+15 ohm-cm        | >= 1.00e+15 ohm-cm        | ASTM D257           |
| Surface Resistance    | >= 1.00e+15 ohm           | >= 1.00e+15 ohm           | ASTM D257           |
| Dielectric Constant   | 2.7                       | 2.7                       | IEC 60250           |
|                       | @Frequency 1.00e+6 Hz     | @Frequency 1.00e+6 Hz     |                     |
|                       | 2.9                       | 2.9                       | IEC 60250           |
|                       | @Frequency 50.0 - 60.0 Hz | @Frequency 50.0 - 60.0 Hz |                     |
| Dielectric Strength   | 27.0 kV/mm                | 686 kV/in                 | in oil; IEC 60243-1 |
|                       | @Thickness 1.60 mm        | @Thickness 0.0630 in      |                     |
|                       | 36.0 kV/mm                | 914 kV/in                 | in oil; IEC 60243-1 |
|                       | @Thickness 0.800 mm       | @Thickness 0.0315 in      |                     |
| Dissipation Factor    | 0.010                     | 0.010                     | IEC 60250           |
|                       | @Frequency 50.0 - 60.0 Hz | @Frequency 50.0 - 60.0 Hz |                     |
|                       | 0.011                     | 0.011                     | IEC 60250           |
|                       | @Frequency 1.00e+6 Hz     | @Frequency 1.00e+6 Hz     |                     |

| Descriptive Properties           | Value  | Comments       |
|----------------------------------|--------|----------------|
| Ball Pressure Test, 75°C +/- 2°C | passes | IEC 60695-10-2 |

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